

THE ART OF MOBILE COLORS

BY RAYMOND O'NEIL.

DRIVEN from formerly sympathetic European lands by the scourge of war, the art of color music has jumped the Atlantic ocean at a bound and landed challengingly in the very midst of startled American scientists, musicians and artists, most of whom were blithely unprepared to receive such an unexpected and almost unwelcome visitor.

Alexander Scriabine, young anarchy of Russian musicians, and composer of music in the sense which is best described by that much abused word "futurist," is the one who lately and forcibly brought the music of colors before the European art world. Some few years ago he composed a symphony which not only broke practically all the established rules for writing music but at the same time called for a color organ to play a symphony of vari-colored lights while the orchestral instruments were taking care of the music of sounds.

Scriabine himself sat at the color organ, or light piano, in Moscow when the symphony was given its first performance in 1911. Unhappily the fuse of the color organ blew out during the second measure of the music and the color accompaniment died suddenly in a blaze of darkness, leaving the sound music to grope its unhappy way alone as best it could.

Thanks to the blown fuse America the other night had the bewildering honor of hearing and seeing "Prometheus" performed with both sounds and colors with Modest Altschuler, director of the Russian Symphony Orchestra of New York, the player of instruments in the orchestra and willing electrical engineers and electricians from the Edison laboratory as the responsible persons. The critics with unfailing regularity were not convinced; artists were doubtful and scientists were frankly contemptuous.

Yet there are at least two men in the United States, who, though skeptical as to the success of the first experiment in New York, are absolutely convinced that color music, after a tremendous amount of experiment and research have been done and after enormous obstacles have been overcome, will take its place on an equal footing with the other fine arts.

Mr. Luckiesh, scientist, is one and Hen-

ry G. Keller, artist, is the other. Mr. Luckiesh is a physicist of the Nela Research Laboratory which the National Lamp Works of the General Electric Company has built in Cleveland to conduct experiments and research work in just such subjects as color music. He has a nation-wide reputation as an authority on light and color and several years ago constructed a color organ to make experiments in color music in his own laboratory. Keller is an American artist of international reputation and a writer and lecturer on the physics and psychology of colors. Neither believes in color music as it exists today but both feel every assurance as to its future.

"What will the art of color music be?" asks Mr. Luckiesh. "My research work and the experiments I have conducted in this direction have given me the opportunity to advance a few tentative suggestions. Suppose we go out into nature and look upon a beautiful scene; a landscape. It takes nature something more than twelve hours to pour all her lights and colors upon this scene and in the time from sunrise to sunset she has played a wonderful variety of lights and colors upon it.

"If we could telescope or compress these changes of light, color and shade into a series of colors which would last five minutes would that be color music?"

I think it so. All our arts are in some manner based on nature and this new art must likewise find its basis in nature. In attempting to formulate this new art we must keep our feet on the ground and keep a firm hold on facts we are relatively sure of.

"From this start we could develop into beings who would appreciate colors for the value of colors alone and not for their association with, say dress, drawing-rooms or any of the hundreds of things with which we now associate colors. Colors would then mean something to us as absolutely as musical sounds do now.

"At first form will have to be combined with color, and then as we develop in appreciation form can be made more and more inconspicuous, finally to disappear altogether, and then we shall be able to appreciate and be moved by color alone.

"There is another question to be considered. In view of the fact that the eye is not analytic shall we play chords of colors? Shall we throw colors out in separate beams so that the eye can distinguish them, or shall we simply throw out successions of single colors? This, I confess, puzzles me greatly.

"I believe that a great deal of experimental work must be done before the new art will have a sufficient basis for its growth. I believe that it should stand

alone and not lean for support upon any other art. It must not parallel sound music. Science, psychology and art must go into its making. When it is finally perfected it can be used with music just as music and drama are combined in the opera and yet keep their identity. But here is a question: Will the emotive value of color music be as great as the emotive value of Schumann-Heink singing a lullaby, or as intense as viewing a sunset? Of course in the present state of the art there is no comparison between the two. If color music is to be played with sound music is it not going to dwindle into insignificance when compared to the power a symphony played by fifty or a hundred musicians can exert?"

"Today we can appreciate sound music; we can be moved by it; we have been educated up to it both intellectually and emotionally and culturally. But we are still in our infancy so far as colors are concerned."

Dr. Luckiesh is not one of those cold-blooded scientists who take joy in using the facts they have discovered as ice-packs on the imagination of those who are creatively or esthetically inclined. Indeed, he has a decided bent toward the esthetic and is inclined at times to use his science in the subordinate position of an anchor to windward when he undertakes one of his artistic cruises.

He earnestly believes that color music, or, as he calls it, the art of mobile color, will be evolved. But the evolution will not come over night; it cannot be brought into being by the snap of the fingers or the wish of a director. It took many, many centuries after the traditional meeting in the house in Florence, where opera was said to have been born, to bring that art of the stage up to its present degree of development. So why should it be expected or hoped that color music can be brought to mean as much as sound music in a few years' time.

The greatest mistake, Mr. Luckiesh believes, that has been made in the experiments so far undertaken in color music lies in the fact that most of the efforts have been directed toward making a color organ "fiddle a tune." All that can or should be done at the present time is to endeavor to create an atmosphere with colors that will harmonize as completely as possible with the music that is being played.

One way to accomplish this would be to use a set of draperies on a stage behind an orchestra and to throw upon these draperies a series of vari-colored lights, which will merge easily one into the other or succeed each other abruptly, as the music may demand. If the attempt is made to play a tune upon a color organ then the organ necessarily

becomes subordinated to the position of any other instrument in the orchestra.

Another mistake that has been made in combining color and sound music, says Mr. Luckiesh, is that experimenters have tried to relate one to the other by the number of vibrations per second sound and light waves possess. Some experimenters say that because light is merely a series of vibrations in the ether that affect the eye and that sound is merely a series of vibrations in the ether that affect the ear, they are therefore physically related. They say, too, that colors which are produced by a small number of vibrations per second are related to sounds which have the same relatively low number of vibrations per second.

But no color is related to any tone physically, Mr. Luckiesh asserts. Sound is a mechanical thing produced by a compression of the air acting on the eardrums. It cannot be said that light which comes to the eye in electro-magnetic waves is that.

Another difficulty in this direction is that the eye is synthetic and the ear analytic. In other words, the ear can listen to an orchestra playing and can pick out the individual notes that make a chord or the different instruments which are playing it. The eye cannot do this in respect to colors. It cannot tell what colors have gone into the making of a certain hue. No one can say that a yellow is yellow. A spectroscope may show that the yellow in question is a mixture of red and green. White light can be made by mixtures of many different colors but to the eye the whites are all alike.

As for the psychological relation between sound and colors, that is a different matter, in the opinion of Mr. Luckiesh. There is no question in his mind but that some sort of a relation exists between them in this respect. The probabilities are that it will be discovered some day.

Many interesting experiments have been made by Mr. Luckiesh in this psychological relation and also in what he calls the emotive value of colors. He has prepared a series of cards the coloring of which goes from one end of the spectrum to the other. Some of the cards are painted with saturated colors; that is, with colors which the layman would call pure or intense, while others are painted with shades and tints of these pure colors.